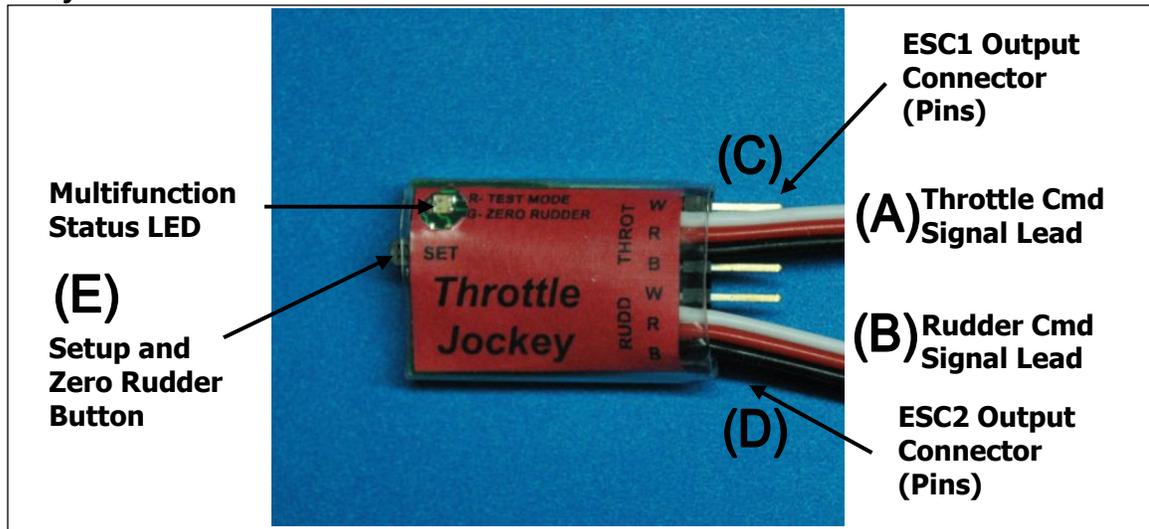


# Throttle Jockey

## General layout



## Quick Setup Guide

1. Install and setup your receiver and ESCs *including servo reverse and end-point adjustments in your transmitter.*
2. Plug the **Throttle Command Signal Lead (A)** into the throttle channel of your receiver
3. Plug the **Rudder Command Signal Lead (B)** into the rudder channel of your receiver. (Y-lead may be required, not incl.)
4. Plug an ESC into each of the **ESC1 Output Connector (C)** and **ESC2 Output Connector (D)** connectors on the Throttle Jockey taking note of the correct polarity.
5. Use the **Setup Button (E)** to set the throttle and rudder neutral, full fwd throttle and full rev throttle commands.

## Features

- Intelligently mixes rudder command with twin throttles to augment steering capability.
- Automatically reduces rudder mix at high throttle settings to reduce motor load when steering hard at speed.
- Will not command greater than 100% throttle when rudder is applied at full throttle.
- Allows re-centering of rudder mid-point with the touch of a button.
- Does not need to be plugged in to adjacent channels on your receiver and doesn't care if throttle or rudder is assigned to a higher channel number.

## Multifunction Status LED

When power is initially switched on both red and green lights will turn as part of a power on self test. The Throttle Jockey will then indicate its configuration using the LEDs:

2 blink RED	Throttle before Rudder mode
3 blink RED	Rudder before Throttle mode

During normal operation the function of the Multifunction Status LED changes to indicate:

GREEN	Zero-rudder indicator
RED (solid)	Steering test mode – no rudder command detected.

During setup operation the function of the Multifunction Status LED changes to indicate:

2 blinks GREEN	Set neutral throttle and rudder commands
3 blinks GREEN	Set full fwd throttle command
4 blinks GREEN	Set full rev throttle command

# Throttle Jockey Installation

The Throttle Jockey is not sensitive to vibration or angles so it can be mounted any place that's convenient, or even left to float with the rest of the wires. It is recommended however that you choose a location that will allow easy access to the setup button should any tweaking be required and has a view of the LEDs as these can be helpful for diagnostic purposes.

## Setup Mode

Before entering Setup mode it is strongly recommended that you either disconnect the motors from your ESCs, or disconnect your ESCs from the Throttle Jockey. (If you disconnect the ESCs from the Throttle Jockey system power can be applied by connecting a standard 4-cell battery pack to one of the ESC Output Connectors.) To enter setup mode turn on your transmitter, press and hold the setup button on the Throttle Jockey, then turn on your receiver. The status LED will flash to indicate the self test result and input configuration, and will then show a solid green to indicate that you've entered Setup mode. (You may now release the Setup button.) The status LED will now flash a 2 green blink pattern. Set the throttle and rudder on your transmitter to neutral then press and hold the setup button until the LED flash pattern changes to a solid green – this will save the neutral command settings. When you release the setup button the LEDs will begin flashing a 3 green blink pattern. Command full forward throttle on your transmitter, and while holding full throttle push and hold the setup button again until the flash pattern changes to a solid green – this will save the full throttle command setting. When you release the setup button the flashing will change to a 4 green blink pattern. Command full reverse throttle on your transmitter, and while holding full reverse throttle push and hold the setup button again until the flash pattern changes to a solid green – this will save the full reverse throttle command setting. The Throttle Jockey will now automatically exit from setup mode and return to normal operation.

## Steering Test Mode and Zero Rudder Recalibration

With the Throttle Jockey installed, when you adjust the rudder trim tab on your transmitter a steering command will be applied not only to the rudder but also to the throttles. For slight trim settings this is not a problem, but in extreme cases you may find it hard to find a throttle setting where one of the propellers is not always spinning. To help find the true rudder neutral setting you can put the Throttle Jockey into Steering Test Mode by disconnecting the rudder input to the Throttle Jockey before you apply power to the receiver. (After power up Throttle Test Mode is indicated by the red LED being on all the time.) In this mode the Throttle Jockey will apply exactly the same command to both throttles, allowing you to trim out the rudder without the affects of mixed throttles complicating the matter. Once you've found the rudder's true neutral position reconnect the rudder lead to the Throttle Jockey and reset the Zero Rudder command to synchronize the Zero Rudder command with the true neutral rudder position. The Zero Rudder command can be reset during normal operation (without going through the setup procedure) by pressing and holding the set button for at least 1 second, then release. The Green LED will illuminate to confirm that the current position has been accepted as the new Zero Rudder setting.

## General Notes

- You must setup the end point adjustments in your transmitter for your ESC **before** connecting the Throttle Jockey.
- The throttle command to both ESCs will be identical until you apply a rudder command, so when setting up the reverse and end points in your transmitter you can connect a single ESC to figure out the correct transmitter settings.
- Both the Throttle Command and Rudder Command signal leads must be connected to your receiver before entering into setup mode.
- During the setup mode the Throttle Jockey learns your throttle end point settings, and by doing so will never apply "greater than full throttle" to your ESCs. This is important if you have auto-calibrating ESCs.
- During set up if the differential thrust of the propellers is going to turn the boat in the opposite direction to that of the rudder, swap the connections for ESC1 and ESC2 at the Throttle Jockey.
- To get into Steering Test Mode you must remove power from the Throttle Jockey before disconnecting the Rudder Command lead. Steering Test Mode will be active the next time power is applied with the Rudder Command Lead disconnected. To return to normal operation the power must again be removed from the Throttle Jockey before reconnecting the Rudder Command lead.
- If your ESCs contain built-in BECs (most do) one of the BECs must be disabled or damage to your ESCs can result when connected through the Throttle Jockey. In most cases this can be done by clipping or extracting the red lead (at the throttle servo connector) on one of the ESCs.
- The rudder trim lever on your transmitter will affect the zero rudder LED, and in extreme cases can make it so that there is always one throttle running. For slightly out-of trim boats it is generally sufficient to only adjust the trim tab to the desired location and not reset the Zero Rudder position. For more extreme out of trim cases use the Steering Test Mode to first get the rudder trim set, then re-set the Throttle Jockey's zero rudder position to that new position.

## Questions?

- If you have questions or concerns about your Throttle Jockey please contact Kevin McLeod by email at [KevinMc.Electronics@gmail.com](mailto:KevinMc.Electronics@gmail.com)